CLAIMS:

1. A multi-piece solid golf ball comprising a solid core, an inner cover layer and an outer cover layer, wherein the solid core is molded from a rubber composition comprising

100 parts by weight of a base rubber composed of (a) 20 to 100 wt% of a polybutadiene having a cis-1,4 content of at least 60% and a 1,2 vinyl content of at most 2%, having a viscosity η at 25°C as a 5 wt% solution in toluene of up to 600 mPa·s, and having the Mooney viscosity (ML_{1+4} (100°C)) of the polybutadiene of 50 to 80, being synthesized using a rare-earth catalyst, in combination with (b) 0 to 80 wt% of a diene rubber other than component (a),

(c) 10 to 60 parts by weight of an unsaturated carboxylic acid or a metal salt thereof or both,

(d) 0.1 to 5 parts by weight of an organosulfur compound,

(e) 5 to 80 parts by weight of an inorganic filler, and

(f) 0.1 to 5 parts by weight of an organic peroxide; and

the inner cover layer has a Shore D hardness of 50 to 80, the outer cover layer has a Shore D hardness of 35 to 60, and

the outer cover layer has a lower Shore D hardness than the inner cover layer.

2. The golf ball of claim 1, wherein the polybutadiene (a) satisfies relationship: $10B + 5 \leq A \leq 10B + 60$, wherein A is the Mooney viscosity (ML_{1+4} (100°C)) of the polybutadiene and B is the ratio Mw/Mn between the weight-average molecular weight Mw and the number-average molecular weight Mn of the polybutadiene.

3. The golf ball of claim 1, wherein the diene rubber (b) includes 30 to 100 wt% of a second polybutadiene which has a cis-1,4 content of at least 60% and a 1,2 vinyl content of at most 5%, has a Mooney viscosity (ML_{1+4} (100°C)) of not more than 55, and satisfies the relationship:

$$\eta \leq 20A - 550,$$

wherein A is the Mooney viscosity (ML_{1+4} (100°C)) of the second polybutadiene and η is the viscosity of the second polybutadiene, in mPa·s, at 25°C as a 5 wt% solution in toluene.

4. The golf ball of claim 3, wherein the second polybutadiene in component (b) is synthesized using a Group VIII catalyst.

5. The golf ball of claim 1, wherein the inner cover layer has a thickness of 0.2 to 3.0 mm and the outer cover layer has a thickness of 0.2 to 2.0 mm.